

Work Order ID 137365 - 1

137365

Page 1

September 25, 2015 10:52:26 AM

Item ID: D4857-M

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Item Name: Wiper Deflector

Stop *NS2*

Start Date: 9/25/2015 Start Qty: 14.00

14

Cust Item ID:

Required Date: 10/16/2015 Req'd Qty: 14.00

14

Customer:

Reference:

Approvals:

Process Plan: SA

Date: Sept 25/15 Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D4857

F

100

0.00

100

Purchasing

Memo

0.00

Purchasing

Issue P/O: 29927

Possible supplier: CARBON BY DESIGN

Manufacture as per dwg D4857-M

Prime Deflector as per dwg (SEE NOTE 4)

Certificate of Conformity release note is required.

CZ SEP 29 2015 14

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

0.00

Packaging

9 DAS
6
9-29 OCT 23 2014

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

Work Order ID 137365

September 25, 2015 10:52:26 AM

137365

Page 2

Item ID: D4857-M Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Wiper Deflector
Start Date: 9/25/2015 Start Qty: 14.00 ***14*** Cust Item ID:
Required Date: 10/16/2015 Req'd Qty: 14.00 ***14*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC5- Inspect part completeness to step on W/O	0.00							
120									
QC	Memo	0.00							DAS 38 9-89
Quality Control									OCT 26 2015
130	Identify as per dwg & Stock Location: <u>ack B2</u>	0.00							
130									
Packaging	Memo	0.00							BAS 27 9-89 OCT 27 2015
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.00							MCS OCT 27 2015
Quality Control									

SU 20151027

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
☐ OTHER : _____									

Picklist Print

September 25, 2015 10:52:34 AM

Page 1

Work Order ID: 137365

137365

Parent Item: D4857-M

D4857-M

Parent Item Name: Wiper Deflector

Start Date: 9/25/2015

Required Date: 10/16/2015

Start Qty: 14.00

Required Qty: 14.00

Comments: IPP REV:A 14.05.21 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4857-P

Purchased

No

Each

0.0000

**

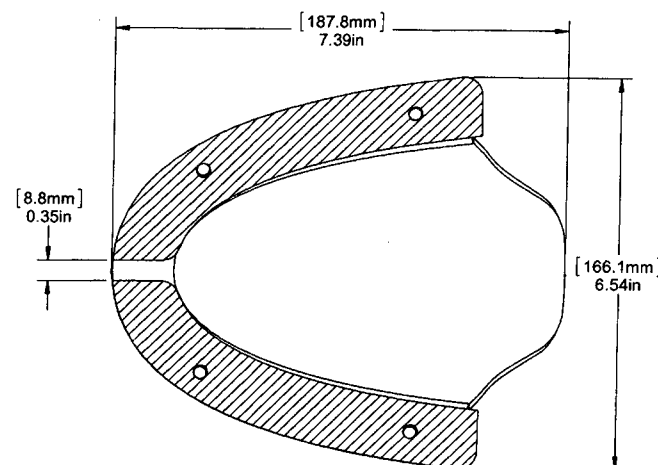
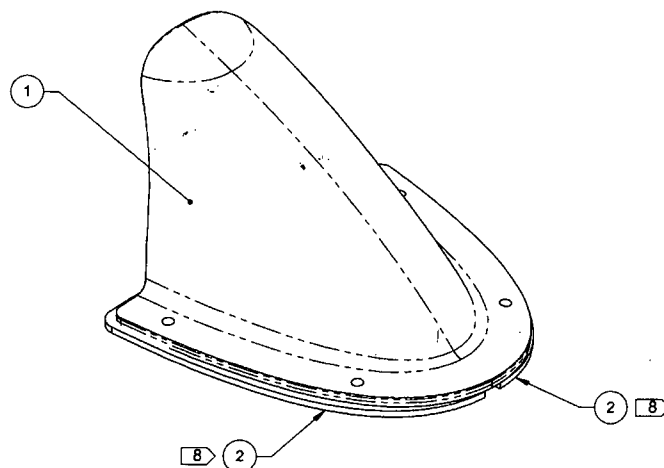
D4857-P

Wiper Deflector

14
9
DAS
6
9.99

ITEM	QTY	D4
	X	
1	1	D4
2	1	D5
3	1	D5

ITEM	QTY	P/N	DESCRIPTION
	X	D4857-041	WIPER DEFLECTOR ASSY
1	1	D4857-1	WIPER DEFLECTOR
2	2	D4944-1	GASKET



D4857-041 WIPER DEFLECTOR ASSY A

RELEASED

2015 JUN 08

ECN 15-582

20150925

SH 137365

F	SHT 1 ADDED -041. ADDED D4857-2M (SHEET 8) AND RELABELED D4857-M TO D4857-1M (ZN B5-7). UPDATED D4757-044 (ZN B5-3). REVISED NOTES 1, 8 AND 10 (ZN A8-4, ZN A8-5, ZN A8-6, ZN A8-7, ZN A8-8). UPDATE PART WEIGHTS	AK / AJS	15.06.03
E	REVISE NOTE 6) (ZN A8-1, A8-2, A8-3); AND NOTE 8) (ZN A8-1, A8-2, A8-3)	AK	14.06.05
D	ADDED D4857-043 (ZN C7-1), D4857-044 (ZN C7-2), D4857-3 (ZN C7-4), D4857-4 (ZN C7-5) AND D4857-M (ZN C7-6)	AK	14.05.13
C	ADDED 4 MOUNTING HOLES	DW	13.12.09
B	REVISED BOM, DRAWING VIEWS, NOTES	PB	13.08.13
A	NEW RELEASE	DB	13.05.23
REV.	DESCRIPTION	BY	DATE

APPROVED

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	AJS	
CHECKED	CP	DRAWING NO. REV. F
MFG. APPR.	DD	D4857 SHEET 1 OF 8
APPROVED	WM	TITLE SCALE
DE APPR.	DS	WIPER DEFLECTOR NTS
DATE	15.06.03	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-041, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D4944-1 GASKETS TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

NOTES:

- 1) MATER
- 2) FINISH
- 3) TOLER
- 4) UNITS:
- 5) BREAK
- 6) IDENTI
- 7) WEIGH
- 8) BOND I



carbon by design

4128 Avenida De La Plata - Oceanside, CA 92056
Phone: 760-643-1300 Fax: 760-643-1333

www.carbonbydesign.com

Packaging List

Date: 10/23/2015

Packaging List No. 18732

Cage Code: 4DG17

CBD Work Order No. 8988

Customer PO No.: PO29927

Billing Address:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Fed-Ex #151793240

Please Deliver To:

Dart Aerospace LTD
1270 Aberdeen
Hawkesbury, ON K6A 1K7
Canada

Customer Phone	Terms	Rep	Ship Date	Ship Via
613-632-5200	Net 30	JB	10/23/2015	FedEx Next Day

Item	Line #	Description	Qty	U/M
120.2083	1	D4857-M, Dart Wiper Deflector S/N: 18732-1/18732-9 <i>15/10/23 SD</i>	9	ea

Thank you for your business.

Total Items: 9

SHIPPING VALUE
\$6,255.00

CERTIFICATE OF CONFORMANCE (SHORT FORM CUSTOMERS ONLY)

I certify that on _____, the Carbon by Design LP furnished the supplies or services called for by the Purchase Order Above via Delivery in accordance with all applicable requirements.

I further certify that the supplies or services are of the quality specified and conform in all respects with the contract requirements, including specifications, drawings, preservation, packaging, packing, marking requirements, and physical item identification, and are in the quantity shown in this or on the attached acceptance document.

Quality: _____ Date: _____

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO29927**

Purchase Order Date 9/29/2015 10:15:45 AM

PO Print Date 9/29/2015

Page Number 1 of 2

Order From :

VU-CBD001

Ship To : DART AEROSPACE LTD

CARBON BY DESIGN
4128 AVENIDA DE LA PLATA
OCEANSIDE, CALIFORNIA 92056
USA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 760-643-1300

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Ship To Contact

Terms Net 30

Ship To Phone

Currency USD

Ship Via: FedEx PI ppd

FOB FCA - (Free Carrier)

Ship Acct:

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D4857-P AS PER DWG D4857 REV. F B137365	Wiper Deflector	10/23/2015 Yes 10/23/2015	FN	14.00 Each <i>15/10/23</i> <i>Rem 951</i>	\$695.00	\$9,730.00
						Line Total:	\$9,730.00
2	71401-45 Procurement Quality Clauses A004 faa-pma/tso A005 right of entry A016 personnel qualification A025 certification of conformance A040 notification of quality escape A041 quality management A042 dart noyification by supplier A043 retention of quality documents	PROCUREMENT QUALITY CLAUSES	10/23/2015 No 10/23/2015		1.00	\$0.00	\$0.00

PO Instructions: Fedex Acc#151793240

Note:

9/29/2015



carbon by design

CERTIFICATE OF CONFORMANCE

PO: No.: PO29927	Description: Dart Wiper Deflector	Inspector: ES	Packing Slip #: 18732
Program: Dart	Drawing: D4857-M Rev F	Qty : 9	Serial Numbers: 18732-1/18732-2/18732-3/18732-4/18732-5/18732-6/18732-7/18732-8/18732-9

Work Requirements:

Statement of Work: See Traveler
Internal Process Doc.: See Traveler
Inspection Document: See Traveler
Manufacturing Process: Prepreg- Trapped Rubber
Security Requirement: Confidential

Approved Non-Conformances:	NO	Pending SDR/ECN:	NO
Disposition:	To Customer, Ship	Shipping method:	FedEX Next Day

ITAR WARNING –This document and its attachments may contain technical data, export of which is restricted by the International Traffic in Arms Regulations (ITAR) or the Export Administration Act (EAA) of 1979, as amended. Disclosure to foreign persons without prior U.S. Government approval is prohibited. Violations of these export laws and regulations are subject to severe civil and criminal penalties.

Certification Statement: Carbon by Design LP certifies the items listed above conform to all of the applicable work and quality standard required in the purchase order listed above and any additional work requirements referenced.

All in process quality standards have been met according to customer requirements and Carbon by Design internal quality and finish requirements. All materials Certification are available for inspection and will remain on file at Carbon by Design for a period of no less than ten years.

Finished Materials/Process Specifications:

Per Drawing Requirements

Additional Quality Clauses:

Per PO Requirements, 100% Inspection

Active Quality Systems: AS 9100 Rev C, ISO9001:2008

Quality Control Representative	Title	Signature	Date
Erik Schauer	Quality Inspector		10/21/15



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator:	Dan Shook
Location	CBD
Customer No.	P029927
Product No.	D4857-M
Serial No.	18732-1
Classified	N/A

Serial Number-AA04

Unit Serial No.	18732-1
Roll Cert.	11688/9333/10267
QA Inspection	<i>[Signature]</i>

Environment-AA02

Lab No.	Sueky Pete
Lamination Start Temp.	72 ☒ °F ☐ °C
Lamination Finish Temp.	76 ☒ °F ☐ °C
Humidity	Q ☐ rising ☐ falling
Date	Sep 1 ☒ lam Sep 2 ☒ fin

Lamination-AA05

Resin System:	☒ epoxy ☐ vinyl ester ☐ polyester ☐ phenolic ☐ fic ☐ other
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other
Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber Content	40+2% <i>u/102165</i>
Type	☐ Cosmetic ☒ Structural ☐ Multi Load

Process-AA03

Process Type:	☐ open mold ☐ vac bag ☒ VARTM ☒ prepreg ☐ RTM ☐ HP Bladder
Cure	☐ room heated oven autoclave ☒ oven autoclave
Tool	☐ soft carbon aluminum REN Foam ☒ aluminum REN Foam
Cure Temp	260 ☒ °F ☐ °C
P.C. Temp	260 ☒ °F ☐ °C
Cure Time	4hr
P.C. Time	4hr
Release	☐ wax ☒ semi-perm
Degas	☒ yes ☐ no

DART AEROSPACE

SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator	Dan Shook
Location	CBD
Customer No.	A029927
Product No.	D4857-M
Serial No.	18732-2
Classified	N/A

Serial Number-AA04

Unit Serial No.	18732-2
Roll Cert.	11688/9333/10267
QA Inspection	WJL

Environment-AA02

Lab No.	Sweaty Pete
Lamination Start Temp.	72 °F °C
Lamination Finish Temp.	78 °F °C
Humidity	0 rising falling
Date	9-2-15 lam 9-3-15 fin

Lamination-AA05

Resin System	☒ epoxy ☐ vinyl ester ☐ polyester ☐ phenolic ☐ urea ☐ other
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other
Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber	☐ Cosmetic ☒ Structural ☐ Multi Load
Content	40 +/- 2 %
Type	

Process-AA03

Process Type	☐ open mold ☐ vac bag ☐ VARTM ☒ prepreg ☐ RTM ☐ HP Bladder
Cure	☐ room ☐ heated ☒ oven ☐ autoclave
Tool	☐ soft carbon ☒ aluminum ☐ REN ☐ Foam
Cure Temp	260 °F °C
Cure Time	4 hrs
Release	☐ wax ☒ semi-perm
Degas	☒ yes ☐ no



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator:	Dan Shook
Location	CBID
Customer No.	P029927
Product No.	D4857-M
Serial No.	18732-3
Classified	N/A

Serial Number-AA04

Unit Serial No.	18732-3
Roll Cert.	11688/9333/10267
QA Inspection	all

Environment-AA02

Lab No.	Shewky P. etc
Lamination Start Temp.	260 74 ☒ °F ☐ °C
Lamination Finish Temp.	76 ☒ °F ☐ °C
Humidity	0 ☐ rising ☐ falling
Date	9-3-15 ☒ lam 9-4-15 ☒ fin

Lamination-AA05

Resin System	☒ epoxy ☐ vinyl ester ☐ polyester ☐ phenolic ☐ flex ☐ other
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other
Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber Content	40% - 2%
Type	☐ Cosmetic ☒ Structural ☐ Multi Load

Process-AA03

Process Type	☐ open mold ☐ bag bag ☐ VARTM ☒ process ☐ RTM ☐ HP bladder
Cure	☐ room heated ☒ oven ☐ autoclave
Tool	☐ soft carbon ☒ aluminum ☐ REN ☐ Foam
Cure Temp	260 ☒ °F ☐ °C
Cure Time	4 hrs
Release	☐ wax ☒ semi-perm
Degas	☒ yes ☐ no



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator	Dan Shook
Location	COD
Customer No.	AO 29927
Product No.	D4857-M
Serial No.	18732-4
Classified	N/A

Serial Number-AA04

Unit Serial No.	18732-4
Roll Cert.	11688/9333/10267
QA Inspection	<i>[Signature]</i>

Environment-AA02

Lab No.	Suecky Pete
Lamination Start Temp.	74 ☒ °F ☐ °C
Lamination Finish Temp.	78 ☒ °F ☐ °C
Humidity	Ø ☐ rising ☐ falling
Date	9-4-15 ☒ lam 9-7-15 ☒ fin

Lamination-AA05

Resin System	☒ epoxy ☐ vinyl ester ☐ polyester ☐ phenolic ☐ flex ☐ other		
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other	Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber Content	40+2%	Type	☐ Cosmetic ☒ Structural ☐ Multi Load

WJ 102115

Process-AA03

Process Type	☐ open mold ☐ pre-bag ☐ VAC/M ☒ prepreg ☐ RTM ☐ HP Bladder		
Cure	☐ room ☐ heated ☒ oven ☐ autoclave	Tool	☐ soft ☐ carbon ☒ aluminum ☐ REN ☐ Foam
Cure Temp	260 ☒ °F ☐ °C	P.C. Temp	260 ☒ °F ☐ °C
Cure Time	4hrs	P.C. Time	4hrs
Release	☐ wax ☒ semi-perm	Degas	☒ yes ☐ no



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator:	Dan Shook
Location	CBD
Customer No.	P029927
Product No.	D4857-M
Serial No.	18732-5
Classified	N/A

Serial Number-AA04

Unit Serial No.	18732-5
Roll Cert.	11688/9333/10267
QA Inspection	WJ

Environment-AA02

Env. No.	Smack Pete
Lamination Start Temp.	70 °F °C
Lamination Finish Temp.	74 °F °C
Humidity	Ø ☐ rising ☐ falling
Date	9-7-15 ☒ lam 9-8-15 ☒ fin

Lamination-AA05

Resin System	☒ epoxy ☐ vinyl ester ☐ polyester ☐ phenolic ☐ flex ☐ other
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other
Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber Content	40+/-2 %
Type	☐ Cosmetic ☒ Structural ☐ Multi Load

Process-AA03

Process Type:	☐ open mold ☐ vac bag ☐ VARTM ☒ prepreg ☐ RTM ☐ HP Bladder
Cure	☐ room heated ☒ oven autoclave
Tool	☐ soft carbon ☒ aluminum REN ☐ Foam
Cure Temp	260 °F °C
Cure Time	4hrs
Release	☐ wax ☒ semi-perm
Degas	☒ yes ☐ no



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator:	Don Skook
Location	CDD
Customer No.	AO29927
Product No.	D4857-M
Serial No.	18732-6
Classified	N/A

Serial Number-AA04

Unit Serial No.	18732-6
Roll Cert.	11688/9333/10267
QA Inspection	CV

Environment-AA02

Lab No.:	Sheddy Pete
Lamination Start Temp.	72 °F °C
Lamination Finish Temp.	76 °F °C
Humidity	Ø ☐ rising ☐ falling
Date	9-2-15 ☒ lam 9-9-15 ☒ fin

Lamination-AA05

Resin System:	☒ epoxy ☐ vinyl ester ☐ polyester ☐ phenolic ☐ flex ☐ other
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other
Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber Content	40+/- %
Type	☐ Cosmetic ☒ Structural ☐ Multi Load

Process-AA03

Process Type:	☐ open mold ☐ vac bag ☐ VARTM ☒ prepreg ☐ RTM ☐ HP Bladder
Cure	☐ room ☐ heated ☒ oven ☐ autoclave
Tool	☐ soft ☐ carbon ☒ aluminum ☐ REN ☐ Foam
Cure Temp	260 °F °C
Cure Time	4 hrs
Release	☐ wax ☒ semi-perm
Degas	☒ yes ☐ no



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

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APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator	Don Shook
Location	CBD
Customer No.	PO29927
Product No.	D4857-M
Serial No.	18732-7
Classified	N/A

Serial Number-AA04

Unit Serial No.	18732-7
Roll Cert.	11688/9333/10267
QA Inspection	WJW

Environment-AA02

Lab No.	Security Petc
Lamination Start Temp.	70 °F °C
Lamination Finish Temp.	74 °F °C
Humidity	φ rising falling
Date	9-9-15 lam 9-10-15 fin

Lamination-AA05

Resin System	☒ epoxy ☐ vinyl ester ☐ polyester ☐ phenolic ☐ flex ☐ other
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other
Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Epoxy Fiber Content	40% ± 2%
Type	☐ Cosmetic ☒ Structural ☐ Multi Load

Process-AA03

Process Type	☐ open mold ☐ wet bag ☐ VARTM ☒ preimp ☐ RTM ☐ HP bladder
Cure	☐ room heated ☒ oven autoclave
Tool	☐ soft carbon ☒ aluminum REN Foam
Cure Temp	260 °F °C
P.C. Temp	260 °F °C
Cure Time	4 hrs
P.C. Time	4 hrs
Release	☐ wax ☒ semi-perm
Degas	☒ yes ☐ no

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SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

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APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator:	Dan Shook
Location	EBD
Customer No.	P029927
Product No.	D4857-M
Serial No.	18732-8
Classified	N/A

Serial Number-AA04

Unit Serial No.	18732-8
Roll Cert.	11688/9333/10267
QA Inspection	CS

Environment-AA02

Lab No.	Smoky Pct
Lamination Start Temp.	74 °F °C
Lamination Finish Temp.	78 °F °C
Humidity	0 ☐ rising ☐ falling
Date	9-10-15 ☒ lam 9-11-15 ☒ fin

Lamination-AA05

Resin System	☒ epoxy ☐ vinyl ester ☐ polyester ☐ phenolic ☐ flex ☐ other
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other
Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber Content	40+/- %
Type	☐ Cosmetic ☒ Structural ☐ Multi Load

CS102115

Process-AA03

Process Type	☐ open mold ☐ vac bag ☐ VARTM ☒ prepreg ☐ RTM ☐ HP Bladder
Cure	☐ room heated ☒ oven ☐ autoclave
Tool	☐ soft carbon ☒ aluminum REN ☐ Foam
Cure Temp	260 °F °C
Cure Time	4hrs
Release	☐ wax ☒ semi-perm
Degas	☒ yes ☐ no



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

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APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator:	<i>Dan Shook</i>
Location	<i>CBD</i>
Customer No.	<i>P029927</i>
Product No.	<i>D4857-M</i>
Serial No.	<i>18732-9</i>
Classified	<i>N/A</i>

Serial Number-AA04

Unit Serial No.	<i>18732-9</i>
Roll Cert.	<i>11688/9333/10267</i>
QA Inspection	<i>EW</i>

Environment-AA02

Lab No.	<i>Suecky Pete</i>
Lamination Start Temp.	<i>70</i> ☒ °F ☐ °C
Lamination Finish Temp.	<i>74</i> ☒ °F ☐ °C
Humidity	<i>0</i> ☐ rising ☐ falling
Date	<i>9-11-15</i> ☒ lam <i>9-14-15</i> ☒ fin

Lamination-AA05

Resin System	☒ epoxy ☐ vinyl ester ☐ polyester ☐ phenolic ☐ flex ☐ other		
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other	Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber Content	<i>40+2%</i>	Type	☐ Cosmetic ☒ Structural ☐ Multi Load

EW 102115

Process-AA03

Process Type	☐ open mold ☐ vac bag ☐ VARTM ☒ prepreg ☐ RTM ☐ HP Bladder		
Cure	☐ room ☐ heated ☒ oven ☐ autoclave	Tool	☐ soft ☐ carbon ☒ aluminum ☐ REN ☐ Foam
Cure Temp	<i>260</i> ☒ °F ☐ °C	P.C. Temp	<i>260</i> ☒ °F ☐ °C
Cure Time	<i>4hrs</i>	P.C. Time	<i>4hrs</i>
Release	☐ wax ☒ semi-perm	Degas	☒ yes ☐ no

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SUBJECT:
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MANUFACTURING COMPOSITE COMPONENTS

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Laminate #1

Appendix B – Layup Schedule Record

LAYER 1	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 7	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 2	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 8	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 3	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 9	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 4	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 10	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 5	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 11	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 6	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 12	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre

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SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

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Laminate # 2
Appendix B – Layup Schedule Record

LAYER 1	☒ Carbon ☒ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☒ 90° ☐ 45° ☐ -45°		LAYER 7	☒ Carbon ☒ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☒ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 2	☒ Carbon ☒ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☒ 90° ☐ 45° ☐ -45°		LAYER 8	☒ Carbon ☒ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☒ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 3	☒ Carbon ☒ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☒ 90° ☐ 45° ☐ -45°		LAYER 9	☒ Carbon ☒ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☒ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 4	☒ Carbon ☒ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☒ 90° ☐ 45° ☐ -45°		LAYER 10	☒ Carbon ☒ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☒ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 5	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☒ 90° ☐ 45° ☐ -45°		LAYER 11	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☒ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 6	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°		LAYER 12	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre	



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
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Laminates #2
Appendix B – Layup Schedule Record

LAYER 13	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°		LAYER 20	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 14	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°		LAYER 21	☐ Carbon ☐ Kevlar ☐ S2 Glass ☒ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☒ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 15	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°		LAYER 22	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☐ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☐ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 16	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°		LAYER 23	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☐ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☐ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 17	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°		LAYER 24	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☐ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☐ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 18	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°		LAYER 25	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☐ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☐ pre ☐ dry ☐ pre ☐ dry ☐ pre	
LAYER 19	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°		LAYER 26	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°	
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre			☐ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☐ pre ☐ dry ☐ pre ☐ dry ☐ pre	

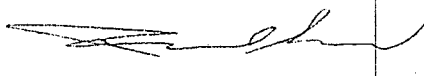
CERTIFICATE OF CONFORMANCE

Aldila Composite Materials hereby certifies that the materials or parts referenced below conform to all applicable requirements and specifications per the customer purchase order as noted. Any exception shall be itemized.

CUSTOMER	CARBON BY DESIGN
CUSTOMER PO NUMBER	10267
ACM SO NUMBER	501240
PRODUCT	3K2X2-FR250B-204/40 (2SP), 50"
CUSTOMER PART#	602.0001
ACM ITEM #	076903
BATCH	15-0937
ROLLS	1, 2
TOTAL QUANTITY	287 LFT, 1196 SF
MFG DATE	8/20/2015
SHIPMENT DATE	8/26/2015
WARRANTY	at 0°F FOR 6 MONTHS
EXPIRATION DATE	2/16/2016

QUALITY ASSURANCE REPRESENTATIVE:

NAME: FREDERICK F. SAREMI

SIGNATURE: 

DATE: 8/25/2015



CERTIFICATE OF CONFORMANCE

Aldila Composite Materials hereby certifies that the materials or parts referenced below conform to all applicable requirements and specifications per the customer purchase order as noted. Any exception shall be itemized.

CUSTOMER	CARBON BY DESIGN
CUSTOMER PO NUMBER	9333
ACM SO NUMBER	501015
PRODUCT	120-AR250C-107/42 (ISP), 50"
CUSTOMER PART#	550.0140
ACM ITEM #	060937
BATCH	15-0121
ROLLS	1
TOTAL QUANTITY	310.0 LFT, 1292 SF
MFG DATE	2/5/2015
SHIPMENT DATE	2/10/2015
WARRANTY	at 0°F FOR 12 MONTHS
EXPIRATION DATE	2/5/2016

QUALITY ASSURANCE REPRESENTATIVE:

NAME: FREDERICK F. SAREMI

SIGNATURE:  DATE: 2/10/2015



2320 Pullman St.
Santa Ana, CA 92705

(949) 623-4400 Ph.
(949) 261-6009 Fx.

CERTIFICATE OF CONFORMANCE

- RECERTIFICATION -

CUSTOMER: CARBON BY DESIGN

Purchase Order Number: 9453

Sales Order Number: 11688

Product: AX-4112-285-50" RC38

Description: High Toughness, Flame Retardant

Description (ctd): Epoxy Aramid Prepreg

Batch Number: 91

Recertification Date: 8/24/2015

Warranty Expiration Date: 11/24/2015

Date of Manufacture: 2/17/2015

Storage Temperature: 40°F or below

Sales Order Quantity: 100 yd

Production Quantity: 100 yd

Test Report

Test	Requirement	Result	Test Method
Weight/psf	0.056 +/- 0.003	0.057	ATS-001
Volatiles/%	Report	2.239	ATS-002
Gel Time/second	Report	243	ATS-003
Flow/%	Report	10.727	ATS-004
Resin Content/%	38 +/- 4	38.995	ATS-005
Production Standard	Requirement		Test Method
Visual Inspection	Pass	Pass	ATS-013
Tack Level / Number	Medium / 3	Medium / 3	ATS-015
Nominal Core Diameter	6"	6"	ATS-013
Sides Coated	Two	Two	ATS-013
Color	Natural	Natural	ATS-013
Liner Configuration	White Paper / 2.5 mil Red Poly	White Paper / 2.5 mil Red Poly	ATS-013

This document certifies material supplied to this order to the following requirements:

Purchase order terms and conditions

Axiom Test Standards (where applicable)

All terms and conditions of the Purchase Order Agreement

Specifications as noted below

Specification(s):

Axiom Test Standard

Recertified in accordance with:

Axiom Materials Quality Procedure AQP-020

Customer Purchase Order No. Recertification

Sales Order No. 13545



Digitally signed

by Rob Lewis

Date:

2015.08.25

14:18:06 -07'00'

Signature of Authorized Agent

PRC-DeSoto International, Inc.

PPG Aerospace - Deft
17451 VON KARMAN AVE, IRVINE,
CA 92614-6295
Phone No.: (800) 544-3338 or
(949) 474-0400

Cust No. 771015
Bill-To: 771015B09
PRC ASC LOS ANGELES
Do not mail invoices:
aerospace_apinvoices@ppg.com
roxanne.rowe@ppg.com
CA 91342 USA
Phone: 818/549-7726
Ship-To: 7710150467
CARBON BY DESIGN
4128 AVENIDA DE LA PLATA
OCEANSIDE, CA 92056 USA
Phone:

Certificate of Conformance

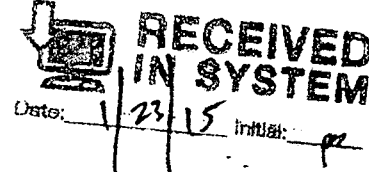
Pick List: P454476

Branch: BINT
Sales Order No.: S 7623
Total Cartons: .00

Customer P.O. LAD11085

Contract/Credit Auth
Number:

Mark For: FX ACCT# 573438523
CSR: JSR



Remarks:

Order Date	Ship Date	Terms	Freight Terms	Freight	Freight	Freight
01/20/2015	01/22/2015	Net 30 Days	Freight Collect	Fedex Freight	ValleryR	
Line	Order Qty	Product	Description / Reference Number	UOM	Package Qty	Total Cartons

1	8	44GN098 1GK	MIL-PRF-85582E, TYPE I, CLASS N, 1-STEP MIX GALLON KIT	EA	8	
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LMA-MR003E TYPE II CLASS 2 GRADE A; 5PTMRT09C
GRADE B; H MS 15-1100 TYPE I CLASS 2 GRADE N; PWA
36515C-3 and FMS 3027C FORM 3
P/N: DE44GN098XZZG2ST

Customer PO: 9312

Lot Number:

102728/102729

8

DOM: June 2014DOE: 6/2016 DOM of Repack: DOE of Repack:

Total Cartons: .00

Picked By:

Checked By:

1

1/21/2015

PPG Aerospace/PRC DeSoto International certifies that the above materials have been manufactured, tested and conforms to all requirements in accordance with applicable specifications. All test data pertaining to batch acceptance requirements defined by the specification for this material is on file and available for inspection upon request. For Non-US PPG Customers, we can only offer Technical Data/Test Reports for any ITAR or EAR restricted specifications with valid US export authorization

Christopher Tafel - Quality Assurance Specialist